PATENT
Attorney Docket No. 47233-5002-00-US (216113)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT APPLICATION of:	)	
	)	
Seiichiro YAMAMOTO et al.	)	Confirmation No.: 1577
	)	
Application No.: 10/551,281	)	Group Art Unit: 1714
	)	
Filed: July 17, 2006	)	Examiner: Coleman, Ryan L.
	)	
FOR: A DISCHARGING MECHANISM AND A DISCHARGING METHOD OF SOLID MATTER	)	

AMENDMENT UNDER 37 C.F.R. § 1.111

Mail Stop Amendment
Commissioner for Patents
P. O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

In response to the non-final Office Action dated November 15, 2010, the period for response to which extends through March 15, 2011 with a one month extension of time petitioned for herein, please amend the above-identified application as follows:

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of the claims in the application:

LISTING OF CLAIMS

1. (Previously Presented): A discharging method of solid matter for discharging solid matter stored in a container from said container, said method comprising the steps of:

storing said solid matter in an intermediate section of said container;

supplying a discharging liquid into a lower section of said container so as to generate a spiral flow of said liquid ~~and said solid matter therein~~;

providing said spiral flow of said liquid from said lower section to said intermediate section by increasing a liquid volume;

gradually generating a spiral flow of said solid matter in said intermediate section by said spiral flow of said liquid; and

discharging said liquid and most of said solid matter present in the form of said spiral flow from a discharge port formed in a bottom of said container such that said solid matter is discharged substantially completely from said container.

2. (Original): A discharging method of solid matter in accordance with claim 1, in which said spiral flow of said liquid and said solid matter is generated by introducing said discharging liquid tangentially into said container in the vicinity of said bottom of said container.

3. (Withdrawn): A discharging mechanism of solid matter for discharging solid matter stored in a container from said container, said mechanism characterized in comprising:

a means for supplying a discharging liquid into said container to generate a spiral flow of said liquid and said solid matter therein; and

a discharging means disposed in a bottom of said container for discharging said liquid and said solid matter present in the form of said spiral flow out of said container.

4. (Withdrawn): A discharging mechanism in accordance with claim 3, in which said means for generating said spiral flow of said liquid and said solid matter is disposed in a lower portion of a side wall of said container.

5. (Withdrawn): A discharging mechanism in accordance with claim 3, in which said means for generating said spiral flow of said liquid and said solid matter comprises a liquid supply section capable of supplying said discharging liquid tangentially into said container.

6. (Withdrawn): A discharging mechanism in accordance with claim 4, in which said means for generating said spiral flow of said liquid and said solid matter comprises a liquid supply section capable of supplying said discharging liquid tangentially into said container.

Claims 7 - 10 (Canceled):

11. (Withdrawn): A discharging mechanism in accordance with claim 3, in which said discharging means is provided as a discharging valve comprising a discharging port disposed in a center of said bottom of said container and a valve body for opening and closing said discharging port.

12. (Withdrawn): A discharging mechanism in accordance with claim 4, in which said discharging means is provided as a discharging valve comprising a discharging port disposed in a center of said bottom of said container and a valve body for opening and closing said discharging port.

13. (Withdrawn): A discharging mechanism in accordance with claim 5, in which said discharging means is provided as a discharging valve comprising a discharging port disposed in a center of said bottom of said container and a valve body for opening and closing said discharging port.

14. (Withdrawn): A discharging mechanism in accordance with claim 6, in which said discharging means is provided as a discharging valve comprising a discharging port disposed in a center of said bottom of said container and a valve body for opening and closing said discharging port.

15. (Withdrawn): Storage equipment for solid matter, characterized in comprising:

a container for storing solid matter;

an inlet section arranged in said container for introducing said solid matter into said container;

at least one liquid supply section arranged in said container for supplying a liquid into said container to thereby generate a spiral flow of said solid matter and said liquid; and

a discharging valve disposed in a bottom of said container for discharging said solid matter stored in said container along with said liquid,

wherein said solid matter stored in said container is concentrated in a central region of said container by means of said spiral flow.

16. (Withdrawn): Storage equipment for solid matter in accordance with claim 11, said equipment characterized in that said liquid supply section is arranged in a lower portion of a side wall of said container.

17. (Withdrawn): Storage equipment for solid matter in accordance with claim 11, said equipment characterized in that said liquid supply section is capable of supplying a discharging liquid tangentially into said container.

18. (Withdrawn): Storage equipment for solid matter in accordance with claim 12, said equipment characterized in that said liquid supply section is capable of supplying a discharging liquid tangentially into said container.

19. (Withdrawn): Storage equipment for solid matter in accordance with claim 11, said equipment characterized in that

said discharging valve comprises a discharging port disposed in the center of said bottom of said container and a valve body for opening and closing said discharging port, wherein said solid matter concentrated in the central region of said container by means of said spiral flow is discharged from said discharge port.

20. (Withdrawn): Storage equipment for solid matter in accordance with claim 12, said equipment characterized in that

said discharging valve comprises a discharging port disposed in the center of said bottom of said container and a valve body for opening and closing said discharging port, wherein said solid matter concentrated in the central region of said container by means of said spiral flow is discharged from said discharge port.

21. (Withdrawn): Storage equipment for solid matter in accordance with claim 13, said equipment characterized in that

said discharging valve comprises a discharging port disposed in the center of said bottom of said container and a valve body for opening and closing said discharging port, wherein said solid matter concentrated in the central region of said container by means of said spiral flow is discharged from said discharge port.

22. (Withdrawn): Storage equipment for solid matter in accordance with claim 14, said equipment characterized in that

said discharging valve comprises a discharging port disposed in the center of said bottom of said container and a valve body for opening and closing said discharging port, wherein said solid matter concentrated in the central region of said container by means of said spiral flow is discharged from said discharge port.

REMARKS

Favorable reconsideration is respectfully requested in light of the following remarks, wherein Claim 1 has been amended. Currently, Claims 1-6 and 11-22 are pending in the present application. Claims 3-6 and 11-22 are withdrawn.

Claims 1 and 2 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,235,147 to Lee et al. ("Lee"). Applicants respectfully traverse the rejection under 35 U.S.C. § 103(a).

Applicants have amended Claim 1 to provide a different recitation relating to Applicants' invention. Claim 1, as amended, recites a discharging method that includes "storing said solid matter in an intermediate section of said container; supplying a discharging liquid into a lower section of said container so as to generate a spiral flow of said liquid; providing said spiral flow of said liquid from said lower section to said intermediate section by increasing a liquid volume; gradually generating a spiral flow of said solid matter in said intermediate section by said spiral flow of said liquid;..." Support for Claim 1 is provided at, for example, page 13, lines 16-27; page 20, lines 9-23; and Fig. 1 of Applicants' specification.

Applicants respectfully submit that Lee fails to disclose or render obvious storing and then supplying a liquid. Instead, Lee teaches supplying the contaminants of the wafers by immersing the wafers 1 in a chemical 3 contained in a bath 10, as described in col. 5, lines 42-48. In other words, the liquid is supplied before the solid matter. Thus, because Lee does not teach or render obvious storing solid matter and then supplying a discharging liquid, Lee fails to disclose or render obvious at least one feature of Claim 1.

Also, Applicants respectfully submit that Lee does not disclose or render obvious supplying a liquid, generating a spiral flow in the liquid, and gradually generating a spiral flow in solid matter by the spiral flow of the liquid, as recited in Claim 1. The nozzles of Lee are disposed throughout the bath 10 so that spiral flow of the liquid cannot be provided from a lower section to an intermediate section by increasing a liquid volume. Therefore, Lee does not disclose or render obvious a discharging method that includes storing solid matter in an intermediate section of a container, supplying a discharging liquid into a lower section of the container so as to generate a spiral flow of the liquid, providing the spiral flow of the liquid from the lower section to the intermediate section by increasing a liquid volume, and gradually generating a spiral flow of the solid matter in the intermediate section by the spiral flow of the liquid, as required by Claim 1. Accordingly, Lee fails to disclose or render obvious at least another feature of Claim 1.

For the reasons provided above, Applicants respectfully submit that Lee does not disclose or render obvious all the features of Claim 1. Therefore, because at least one feature is not disclosed or rendered obvious, Applicants respectfully submit that a *prima facie* case of obviousness has not been made against Claim 1.

As for the rejection under 35 U.S.C. § 103(a), of Claim 2, Applicants note that this claim depends from Claim 1 and recites the same combination of allowable features recited in Claim 1 as well as additional features that define over the applied art. Accordingly, Applicants respectfully request that the rejection under 35 U.S.C. § 103(a), of Claims 1 and 2, be withdrawn, and the claims allowed.

Should any questions arise in connection with this application, or should the Examiner believe a telephone conference would be helpful in resolving any remaining issues pertaining to this application, it is respectfully requested that the undersigned be contacted at the number indicated below.

EXCEPT for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§ 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account 50-0573. This paragraph is intended to be a CONSTRUCTIVE PETITION FOR EXTENSION OF TIME in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully Submitted,

Date: March 15, 2011 By: _____

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